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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application Chad A. Banter et al.) Examiner: Dabney, P.
Serial No.: 09/348,416)
Filed: July 7, 1999)
For: ACOUSTIC PROTECTIVE COVER)
ASSEMBLY)

Honorable Commissioner of Patents
and Trademarks
Washington, D. C. 20231

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Technology Center 2600

DECLARATION OF CHAD A. BANTER

Sir:

1. My name is Chad A. Banter. I am a named inventor in the above application. I hold a B.S. degree in Ocean Engineering specializing in Acoustics from Florida Atlantic. I have 15 years of engineering experience including 9 years experience at General Dynamics Electric Boat Division evaluating and recommending modification to improve acoustic signatures on various Naval Nuclear Submarines. For the past 4 years I have been employed by W. L. Gore & Associates, Inc. in the capacity of new product development and research.

2. The following information is provided as a follow-up to information described and shown during an interview with the Patent Office on October 30, 2001, and in response to a request to provide such information with the accompanying response to the outstanding Office Action.

3. During the aforementioned interview, I showed an illustration (Attachment A) depicting the construction of the Repolle '012 acoustic cover and the construction of the present invention. The differences between the Repolle '012 construction having a surface layer covering the membrane versus the "captive construction" of the present invention where the membrane is exposed to the atmosphere were discussed.

4. Acoustic impedance/transmission loss performance of the Repolle '012 assembly compared to that of the device of the present invention was also presented during the interview (Appendix B). Specifically, I presented a schematic of the test apparatus used to measure and compare acoustic impedance of acoustic assemblies, a schematic of the means by which acoustic impedance/transmission loss occurs in a device, and a bar graph showing the impact of membrane and assembly construction on transmission loss. I showed that the transmission loss of the 'captive construction'

assembly of the present invention, where the membrane was exposed to the atmosphere in the unbonded region, was significantly lower than the transmission loss of the Repolle '012 assembly construction, regardless of the membrane incorporated in the assembly.

5. I also presented samples (Appendix C) of the Repolle '012 assembly and the 'captive construction' assembly of the present invention to provide a visual demonstration of the differences in construction of the assemblies.

6. Upon information and belief, I believe that the unique 'captive construction' assemblies of the present invention possess characteristics and transmission loss performance which are unachievable with the Repolle '012 construction. Specifically, the 'captive construction' of the assembly, where the membrane is exposed to the atmosphere in the unbonded region, provides for upstream sound pressure waves to vibrate the unbonded membrane and transfer structureborne energy (mechanical vibration) of the protective membrane to airborne energy (pressure waves) downstream of the acoustic protective assembly of the invention, resulting in low acoustic loss/attenuation, as described in the present application (see, e.g., page 9, lines 1-6).

I hereby declare that all statements made herein of my own knowledge are true and that the statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

March 18, 2002

Date



Chad A. Banter

Enclosures: Appendices A-C